

**Summary of Illness/Injury Incidents
Reported in California as Potentially Related to Pesticide Exposure
Summarized Statewide and by County of Occurrence¹
2000**

Relationship ²	TOTAL CASES	Type Of Exposure ³				Intended Use ⁴	
		Direct Contact	Drift	Residue	Other/ Unknown	Agricultural	Non- Agricultural
TOTALS							
Definite	159	112	12	1	34	21	138
Probable	478	101	207	96	74	228	250
Possible	256	21	68	92	75	168	88
Unlikely	32	2	5	10	15	15	17
Indirect	2	0	0	0	2	1	1
Asymptomatic	38	6	11	9	12	16	22
Unrelated	97	0	0	0	0	0	0
Insufficient	14	0	0	0	0	0	0
Unavailable	68	0	0	0	0	0	0
OVERALL	1144	242	303	208	212	449	516
COUNTY ⁵							
ALAMEDA							
Definite	4	1	0	0	3	0	4
Probable	15	2	1	2	10	1	14
Possible	2	2	0	0	0	0	2
Asymptomatic	2	0	0	0	2	0	2
Unrelated	4	0	0	0	0	0	0
Unavailable	2	0	0	0	0	0	0
AMADOR							
Definite	3	2	1	0	0	0	3
Possible	1	0	0	0	1	1	0

Relationship ²	TOTAL CASES	Type Of Exposure ³				Intended Use ⁴	
		Direct Contact	Drift	Residue	Other/ Unknown	Agricultural	Non- Agricultural
BUTTE							
Definite	3	3	0	0	0	0	3
Probable	6	0	4	1	1	2	4
Possible	1	0	1	0	0	0	1
Unlikely	1	0	0	1	0	0	1
Unrelated	1	0	0	0	0	0	0
CALAVERAS							
Definite	1	1	0	0	0	0	1
Probable	1	1	0	0	0	0	1
Unavailable	1	0	0	0	0	0	0
COLUSA							
Possible	2	0	0	1	1	2	0
Unavailable	1	0	0	0	0	0	0
CONTRA COSTA							
Definite	1	1	0	0	0	0	1
Probable	7	0	2	0	5	0	7
Unavailable	2	0	0	0	0	0	0
EL DORADO							
Definite	2	0	2	0	0	0	2
Probable	2	0	1	0	1	0	2
Possible	1	0	0	0	1	0	1
Unlikely	1	0	0	1	0	0	1
Unrelated	1	0	0	0	0	0	0
FRESNO							
Definite	5	4	0	0	1	3	2
Probable	21	6	4	3	8	12	9
Possible	18	3	4	7	4	12	6
Unlikely	2	0	0	0	2	1	1
Asymptomatic	1	0	0	0	1	0	1
Unrelated	13	0	0	0	0	0	0
Insufficient	2	0	0	0	0	0	0
Unavailable	3	0	0	0	0	0	0

Relationship ²	TOTAL CASES	Type Of Exposure ³				Intended Use ⁴	
		Direct Contact	Drift	Residue	Other/ Unknown	Agricultural	Non- Agricultural
GLENN							
Probable	1	0	0	0	1	1	0
HUMBOLDT							
Definite	2	2	0	0	0	0	2
Probable	6	3	2	1	0	1	5
Possible	1	0	0	0	1	0	1
Unrelated	1	0	0	0	0	0	0
IMPERIAL							
Definite	2	0	0	0	2	1	1
Probable	4	1	3	0	0	1	3
Possible	2	0	2	0	0	2	0
KERN							
Definite	3	2	0	0	1	0	3
Probable	6	2	1	2	1	2	4
Possible	10	1	3	5	1	7	3
Unlikely	2	0	1	1	0	2	0
Unrelated	11	0	0	0	0	0	0
KINGS							
Probable	58	0	58	0	0	58	0
Possible	2	0	2	0	0	1	1
Unlikely	1	0	0	0	1	1	0
Unrelated	1	0	0	0	0	0	0
LAKE							
Definite	2	2	0	0	0	1	1
Probable	1	1	0	0	0	0	1
Possible	1	0	0	1	0	1	0
LASSEN							
Definite	2	2	0	0	0	2	0
Probable	1	0	1	0	0	0	1

Relationship ²	TOTAL CASES	Type Of Exposure ³				Intended Use ⁴	
		Direct Contact	Drift	Residue	Other/ Unknown	Agricultural	Non-Agricultural
LOS ANGELES							
Definite	27	19	1	0	7	0	27
Probable	48	10	14	20	4	0	48
Possible	22	2	3	12	5	0	22
Unlikely	1	0	0	0	1	0	1
Asymptomatic	7	0	1	0	6	0	7
Unrelated	11	0	0	0	0	0	0
Insufficient	3	0	0	0	0	0	0
Unavailable	13	0	0	0	0	0	0
MADERA							
Definite	1	0	0	0	1	0	1
Probable	5	3	2	0	0	4	1
Possible	14	0	3	2	9	14	0
Indirect	1	0	0	0	1	1	0
Asymptomatic	1	0	0	0	1	1	0
Unrelated	2	0	0	0	0	0	0
Insufficient	3	0	0	0	0	0	0
Unavailable	2	0	0	0	0	0	0
MARIN							
Probable	4	1	2	0	1	0	4
Possible	1	0	1	0	0	0	1
MARIPOSA							
Definite	1	1	0	0	0	0	1
Insufficient	1	0	0	0	0	0	0
MENDOCINO							
Probable	3	0	1	0	2	1	2
Asymptomatic	1	0	1	0	0	0	1
Unrelated	1	0	0	0	0	0	0

Relationship ²	TOTAL CASES	Type Of Exposure ³				Intended Use ⁴	
		Direct Contact	Drift	Residue	Other/ Unknown	Agricultural	Non- Agricultural
MERCED							
Definite	2	2	0	0	0	0	2
Probable	11	3	7	1	0	6	5
Possible	5	1	2	1	1	5	0
Unlikely	2	0	0	1	1	2	0
Asymptomatic	1	0	1	0	0	0	1
Unrelated	3	0	0	0	0	0	0
Insufficient	1	0	0	0	0	0	0
MONTEREY							
Definite	3	3	0	0	0	1	2
Probable	52	3	26	20	3	45	7
Possible	38	0	26	11	1	38	0
Asymptomatic	11	0	3	8	0	11	0
Unrelated	1	0	0	0	0	0	0
Unavailable	2	0	0	0	0	0	0
NAPA							
Definite	5	4	0	0	1	0	5
Probable	1	1	0	0	0	0	1
Possible	2	0	1	1	0	1	1
Unrelated	2	0	0	0	0	0	0
NEVADA							
Definite	1	1	0	0	0	0	1
Unavailable	1	0	0	0	0	0	0
ORANGE							
Definite	3	3	0	0	0	0	3
Probable	14	3	6	4	1	0	14
Possible	8	0	3	5	0	3	5
Unlikely	1	0	1	0	0	0	1
Unrelated	3	0	0	0	0	0	0
Unavailable	8	0	0	0	0	0	0

Relationship ²	TOTAL CASES	Type Of Exposure ³				Intended Use ⁴	
		Direct Contact	Drift	Residue	Other/ Unknown	Agricultural	Non- Agricultural
PLACER							
Definite	1	1	0	0	0	0	1
Possible	1	0	1	0	0	0	1
Insufficient	1	0	0	0	0	0	0
PLUMAS							
Probable	1	1	0	0	0	0	1
RIVERSIDE							
Definite	2	1	0	0	1	0	2
Probable	13	4	6	2	1	0	13
Unlikely	1	0	0	0	1	0	1
Asymptomatic	2	0	2	0	0	0	2
Unrelated	1	0	0	0	0	0	0
SACRAMENTO							
Definite	9	7	1	0	1	0	9
Probable	7	2	0	1	4	0	7
Unlikely	1	0	0	0	1	1	0
Unrelated	2	0	0	0	0	0	0
Unavailable	8	0	0	0	0	0	0
SAN BENITO							
Probable	2	1	0	0	1	0	2
SAN BERNARDINO							
Definite	6	4	1	0	1	0	6
Probable	5	2	3	0	0	0	5
Possible	2	1	0	0	1	0	2
Unlikely	1	0	0	1	0	0	1
Unrelated	4	0	0	0	0	0	0

Relationship ²	TOTAL CASES	Type Of Exposure ³				Intended Use ⁴	
		Direct Contact	Drift	Residue	Other/ Unknown	Agricultural	Non- Agricultural
SAN DIEGO							
Definite	6	5	1	0	0	0	6
Probable	19	4	6	4	5	3	16
Possible	5	2	0	2	1	0	5
Unlikely	5	0	2	1	2	1	4
Asymptomatic	1	0	0	0	1	0	1
Unrelated	1	0	0	0	0	0	0
Unavailable	2	0	0	0	0	0	0
SAN FRANCISCO							
Definite	2	1	0	0	1	0	2
Probable	1	1	0	0	0	0	1
Possible	1	1	0	0	0	0	1
Asymptomatic	1	1	0	0	0	0	1
Unavailable	2	0	0	0	0	0	0
SAN JOAQUIN							
Definite	10	7	0	0	3	4	6
Probable	42	5	3	24	10	26	16
Possible	11	2	1	4	4	6	5
Unlikely	6	0	0	1	5	5	1
Asymptomatic	1	0	0	0	1	0	1
Unrelated	3	0	0	0	0	0	0
Unavailable	1	0	0	0	0	0	0
SAN LUIS OBISPO							
Definite	1	0	0	0	1	0	1
Possible	3	0	0	0	3	1	2
Unlikely	1	0	0	1	0	0	1

Relationship ²	TOTAL CASES	Type Of Exposure ³				Intended Use ⁴	
		Direct Contact	Drift	Residue	Other/ Unknown	Agricultural	Non-Agricultural
SAN MATEO							
Definite	3	3	0	0	0	0	3
Probable	1	1	0	0	0	0	1
Possible	1	0	0	0	1	0	1
Unlikely	2	1	0	0	1	1	1
Asymptomatic	1	1	0	0	0	0	1
Unrelated	2	0	0	0	0	0	0
Unavailable	1	0	0	0	0	0	0
SANTA BARBARA							
Definite	4	3	0	0	1	1	3
Probable	3	1	2	0	0	2	1
Possible	1	0	1	0	0	1	0
Unrelated	3	0	0	0	0	0	0
Unavailable	2	0	0	0	0	0	0
SANTA CLARA							
Definite	10	6	0	0	4	1	9
Probable	3	1	2	0	0	0	3
Possible	11	2	6	0	3	1	10
Unlikely	2	0	1	1	0	0	2
Indirect	1	0	0	0	1	0	1
Unrelated	2	0	0	0	0	0	0
Unavailable	1	0	0	0	0	0	0
SANTA CRUZ							
Definite	1	0	0	0	1	0	1
Probable	7	1	3	2	1	2	5
Unrelated	1	0	0	0	0	0	0
SHASTA							
Definite	2	1	1	0	0	0	2
SISKIYOU							
Asymptomatic	1	1	0	0	0	0	1

Relationship ²	TOTAL CASES	Type Of Exposure ³				Intended Use ⁴	
		Direct Contact	Drift	Residue	Other/ Unknown	Agricultural	Non- Agricultural
SOLANO							
Definite	5	2	3	0	0	0	5
Probable	9	1	7	0	1	5	4
Possible	2	0	0	0	2	1	1
Asymptomatic	3	0	3	0	0	3	0
Unrelated	1	0	0	0	0	0	0
SONOMA							
Definite	2	2	0	0	0	0	2
Probable	13	4	3	5	1	3	10
Possible	12	3	1	6	2	8	4
Unrelated	6	0	0	0	0	0	0
Unavailable	3	0	0	0	0	0	0
STANISLAUS							
Definite	8	4	1	0	3	1	7
Probable	12	7	1	1	3	5	7
Possible	6	0	1	1	4	3	3
Unlikely	2	1	0	1	0	1	1
Unrelated	11	0	0	0	0	0	0
Unavailable	1	0	0	0	0	0	0
SUTTER							
Definite	3	2	0	1	0	1	2
Probable	3	1	0	1	1	1	2
Possible	2	1	0	0	1	1	1
Unrelated	1	0	0	0	0	0	0
Unavailable	2	0	0	0	0	0	0
TEHAMA							
Probable	3	2	1	0	0	0	3
Asymptomatic	1	1	0	0	0	1	0
Unrelated	1	0	0	0	0	0	0
TRINITY							
Possible	1	0	0	0	1	0	1

Relationship ²	TOTAL CASES	Type Of Exposure ³				Intended Use ⁴	
		Direct Contact	Drift	Residue	Other/ Unknown	Agricultural	Non-Agricultural
TULARE							
Definite	5	4	0	0	1	1	4
Probable	54	19	29	2	4	42	12
Possible	32	0	2	26	4	30	2
Asymptomatic	1	0	0	1	0	0	1
Unrelated	2	0	0	0	0	0	0
Insufficient	2	0	0	0	0	0	0
Unavailable	1	0	0	0	0	0	0
TUOLUMNE							
Probable	1	1	0	0	0	0	1
VENTURA							
Definite	5	5	0	0	0	3	2
Probable	9	2	3	0	4	4	5
Possible	28	0	4	7	17	27	1
Unrelated	1	0	0	0	0	0	0
Unavailable	6	0	0	0	0	0	0
YOLO							
Probable	1	0	1	0	0	0	1
Possible	5	0	0	0	5	2	3
Asymptomatic	2	2	0	0	0	0	2
Insufficient	1	0	0	0	0	0	0
Unavailable	3	0	0	0	0	0	0
YUBA							
Definite	1	1	0	0	0	1	0
Probable	2	0	2	0	0	1	1
Possible	1	0	0	0	1	0	1

1. **Source:** California Department of Pesticide Regulation, Pesticide Illness Surveillance Program.
The term “potentially related to pesticide exposure” refers to all cases reported to the program, some of which were later determined to be unrelated to pesticide exposure.

2. **Relationship:** Degree of correlation between pesticide exposure and resulting symptomatology.

Definite	: High degree of correlation between pattern of exposure and resulting symptomatology. Requires both medical evidence (such as measured cholinesterase inhibition, positive allergy tests, characteristic signs observed by medical professional) and physical evidence of exposure (environmental and/or biological samples, exposure history) to support the conclusions.
Probable	: Relatively high degree of correlation exists between the pattern of exposure and the resulting symptomatology. Either medical or physical evidence is inconclusive or unavailable.
Possible	: Some degree of correlation evident. Medical and physical evidence are inconclusive or unavailable.
Unlikely	: A correlation cannot be ruled out absolutely. Medical and/or physical evidence suggest a cause other than pesticide exposure.
Indirect	: Pesticide exposure is not responsible, but pesticide regulations or product label requirements contributed in some way, (e.g. heat stress while wearing chemical resistant clothing).
Asymptomatic	: Exposure occurred, but did not result in illness/injury. Cholinesterase depression without symptoms falls in this category.
Unrelated	: Definite evidence of cause other than pesticide exposure including exposures to chemicals other than pesticides. Since there is no exposure to pesticides, there are no entries under "Type of Exposure" or "Intended Use."
Insufficient	: The available information is inadequate to make an informed judgment on the relationship between pesticide exposure and the reported symptomatology. For submitted investigations, the investigator failed to make an adequate attempt to obtain the necessary information. Since a relationship to pesticide exposure cannot be determined, there are no entries under "Type of Exposure" or "Intended Use."
Unavailable	: The available information is inadequate to make an informed judgement on the relationship between pesticide exposure and the reported symptomatology. For submitted investigations, the investigator made an adequate attempt to collect the necessary information, but was not able to do so (e.g., none of the parties concerned could be contacted). There usually needs to be more effort than to say the employee is not available for interview; other parties can often supply useful information. Since a relationship to pesticide exposure cannot be determined, there are no entries under "Type of Exposure" or "Intended Use."

3. **Type of Exposure:** Characterization of how an individual came in contact with a pesticide.

Direct Contact	: An appreciable amount of pesticide contacted the individual's body surface. This includes: 1) sprays or squirts from application equipment; 2) leaks or spills whether or not related to the application; and 3) deliberate immersion (as when cleaning implements in a basin with antimicrobials). This excludes drift exposures.
Drift	: Spray, mist, fumes, or odor carried from the target site by air. Drift must be related to an application or mix/load activity.
Residue	: The part of a pesticide that remains in the environment for a period of time following an application or drift. This includes odor after the completion of an application.
Other/Unknown	: Any of the following: 1) ingestion; 2) multiple routes of exposure; 3) residue from a spill; 4) exposure to smoke or pyrolytic products from a fire where pesticides are burning; 5) route of exposure is not known.

4. **Intended Use:** Agricultural/Non-Agricultural - Indicates whether the pesticide(s) were intended to contribute to the production of agricultural commodities.

Agricultural : The pesticide(s) were intended to contribute to the production of agricultural commodities, including livestock. This includes: 1) agricultural research facilities, 2) handling of raw agricultural commodities in packing houses, 3) drift from agricultural applications into non-agricultural areas, and 4) transportation and storage of pesticides on farm lands. It excludes forestry operations, although they are classified as agricultural for regulatory purposes. It also excludes manufacture, transportation, and storage of pesticides prior to arrival at the site of agricultural production.

Non-Agricultural : The pesticide(s) were not intended to contribute to the production of agricultural commodities. This includes: 1) residential pesticide uses, 2) structural pest control, 3) rights-of-way, 4) parks, 5) landscaped urban areas, and 6) manufacture, transportation and storage of pesticides except on farm lands.

5. **County:** Individual counties in California where the incident occurred. If a county is not listed, there were no reported illnesses for that county for the year.

Whom to Contact:

California Department of Pesticide Regulation
Worker Health and Safety Branch
Phone: (916) 445-4222.
Physical address: 1001 I St., Sacramento CA 95814-2828.
Mailing address: P.O. Box 4015, Sacramento, CA 95812-4015
Fax: (916) 445-4280
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About the Pesticide Illness Surveillance Program Data

Pesticide-related illnesses have been tracked within the state of California for nearly 50 years. The California Environmental Protection Agency, Department of Pesticide Regulation (DPR) maintains a surveillance program which records human health effects of pesticide exposure. The Pesticide Illness Surveillance Program (PISP) documents information on adverse effects from pesticide products, whether elicited by the active ingredients, inert ingredients, impurities, or breakdown products. This program maintains a database, which is utilized for evaluating the circumstances of pesticide exposures resulting in illness. This database is consulted regularly by staff who evaluate(s) the effectiveness of the DPR pesticide safety programs and recommend changes when appropriate.